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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,651	07/28/2003	Joseph W. Harris	JWH / 59US	4424

26875 7590 05/18/2006

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EXAMINER

IP, SIKYIN

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/628,651

Applicant(s)

HARRIS, JOSEPH W.

Examiner

Sikyln Ip

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-7,22,25 and 35-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-7,22,25 and 35-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/28/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5-7, 22, 25 and 35-42 are rejected under 35 U.S.C. § 103 as being unpatentable over PL 149319 in view of CN 1060052. (References are cited in parent application).

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PL 149319 in the abstract discloses the features including the claimed solid brazing components – Cu alloy powder. The difference between PL 149319 and the claims are as follows: PL 149319 does not disclose the claimed Mn, liquidus, solidus, thermal arrest temperatures, and forms of the brazing component. However, the claimed Mn content reads on zero which suggests Mn can be eliminated from the brazing alloy. The claimed liquidus, solidus, and thermal arrest temperatures are material properties which would have been inherently possessed by the material disclosed by PL 149319. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP § 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)."

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With respect to the form of the brazing component, CN 1060052 discloses brazing solder component could be formed into rods, ingots, strips, or powder. Therefore, it is contemplated within ambit of ordinary skill artisan to form the brazing component into form suitable for the brazing application such as a rod without paste and carrier. It is well settled that the form of reactants is believed mere a choice between well known forms of such substances. In the absence of evidence of some unobvious aspect of their selection, use of those substances would seem to add nothing of patentable significance to the instant claims. In re Austin, et al., 149 USPQ 685, 688.

With respect to the recited "fluxless" limitation in claims 39-42 that PL 149319 teaches to add paste to lower the brazing temperature. In view of said teaching in PL 149319 that it is contemplated within ambit of ordinary skill artisan to eliminate paste when lower brazing temperature is not needed. It is well settled that omission of an element (here paste and carrier) and its function where not needed is obvious. Ex parte Rainu, 168 USPQ 375 (PTO Bd. of App. 1969) and In re Karlson, 136 USPQ 184 (CCPA 1963).

Claims 35-42 are rejected under 35 U.S.C. § 103 as being unpatentable over EP 465861 in view of CN 1060052. (References are cited in parent application).

Claims 22, 25, and 35-42 are rejected under 35 U.S.C. § 103 as being unpatentable over SU 1706816 in view of CN 1060052. (References are cited in parent application).

EP 465861 or SU 1706816 in the abstract discloses the features including the claimed solid brazing components – Cu alloy solder. The difference between and the

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claims are as follows: EP 465861 or SU 1706816 does not disclose the claimed liquidus, solidus, thermal arrest temperatures, and forms of the brazing component. However, the claimed liquidus, solidus, and thermal arrest temperatures are material properties which would have been inherently possessed by the material disclosed by cited references. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP § 2112.01.

With respect to the form of the brazing component, CN 1060052 discloses brazing solder component could be formed into rods, ingots, strips, or powder. Therefore, it is contemplated within ambit of ordinary skill artisan to form the brazing component into form suitable for the brazing application such as a rod without paste and carrier. It is well settled that the form of reactants is believed mere a choice between well known forms of such substances. In the absence of evidence of some unobvious aspect of their selection, use of those substances would seem to add nothing of patentable significance to the instant claims. In re Austin, et al., 149 USPQ 685, 688.

Claims 22 and 25 are rejected under 35 U.S.C. § 103 as being unpatentable over CN 1060052. (References are cited in parent application).

Claims 1, 5, and 22 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 3674471 to Joseph.

CN 1060052 (abstract) or Joseph (col. 1, line 55 to col. 2, line 3) discloses the features including the claimed solid brazing components and structures. The difference

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between cited references and the claims are as follows: Cited references do not disclose the claimed liquidus, solidus, and thermal arrest temperatures. However, the claimed liquidus, solidus, and thermal arrest temperatures are material properties which would have been inherently possessed by the material disclosed by cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product. In re Best, 195 USPQ, 430 and MPEP § 2112.01.

Response to Arguments

Applicant's arguments and declaration filed March 6, 2006 have been fully considered but they are not persuasive.

Applicant's argument below in page 3 of instant remark filed March 6, 2006

If inoperability is established, the reference is not effective as prior art against the instant claims. Applicant again asserts the arguments presented at pages 8-9 of the Response dated August 31, 2005, i.e., that the teachings of the Polish Abstract cannot be duplicated, i.e., a copper components cannot be brazed using the brazing paste disclosed therein. Applicant presented evidence for the specific example provided in the Polish Abstract as well as for other brazing pastes that fall throughout the broad ranges disclosed therein. Thus the reference has been shown by a preponderance of the evidence to be inoperable, and Applicant respectfully requests that all rejections over the Polish Abstract, alone or in combination with another reference, be withdrawn. Further, if the evidence is deemed by

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.” The Response by

applicant, dated August 31, 2005 (USPTO mail room date September 6, 2005), pages 8-9 below is referred to Affidavit from Robert Henson.

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The Polish Abstract discloses a brazing paste of 50-95 Cu alloy powder and 5-50 wt.% carrier. A specific example is given in which the paste consists of 80% Cu alloy powder and 20% carrier, where the carrier consists of 2% Me cellulose, 18% glucose and 80% water. The Polish Abstract states that "the paste permits brazing below 973 K," which corresponds to 1292°F. The specific powder example given (referred to herein as Alloy A) in the Polish Abstract was made, and mixed with the specific carrier disclosed, in the amounts disclosed, and the paste could not be brazed, as set forth in the Affidavit from Linda Morgan and the First Affidavit from Robert Henson. In addition, several variations of alloys within the broad range disclosed in the Polish Abstract were also tried, mixed with the same carrier, and no brazed joints could be formed. These variations included trying the following:

- phosphorus (P) contents of 0.1, 1, 3, 4, 6, 6.7, 10 and 11, which are all within and throughout the broad disclosed range of 0.1-12; and
- tin (Sn) contents of 1, 4, 6, 6.65, 8, 9, 11 and 25, which are all within and throughout the broad disclosed range of 0.1-25.

For each alloy powder mixed with the carrier, heat was applied both below and above 973 K, and for most of the alloy variations, the alloy would not melt and flow. For those alloys where some

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In Mr. Henson's declaration, Mr. Henson disclosed data below:

I have reviewed the PL 149319 reference. Under my direction, alloys A-H, as set forth in the table below, were made into powders at my direction.

Alloy	P	Sn	Si	Ni	Ag	Sb	Cu
A	0.1	25	0.5	0.1	15	0.1	Balance
B	1	6	0.5	0.1	15	0.1	Balance
C-1	3	6	0.5	0.1	15	0.1	Balance
C-2	3	6	0.5	0.1	0	0.1	Balance
D-1	6	11	0.5	0.1	15	0.1	Balance
D-2	6	11	0.5	0.1	0	0.1	Balance
E	6	4	0.5	0.1	15	5	Balance
F	6	8	0.5	0.1	15	3	Balance
G	11	9	0.5	0.1	15	5	Balance
H-1	11	6	0.5	0.1	15	0.1	Balance
H-2	11	6	0.5	0.1	0	0.1	Balance

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I	4	8	0.5	0	0	0	Balance
J	10	1	0.5	0	0	0	Balance
K	6.7	6.65	0.15	0	0	0	Balance

The powders had about a 50 mesh size, which corresponds to a majority of particles being below 297 μm . Alloy A corresponds exactly to the example set forth in the second-to-last line of the Polish Abstract, but falls outside the claimed ranges in the present application. Alloys B through H-2 all fall within the broad range disclosed in the second sentence of the Polish Abstract, mainly with the phosphorus and tin contents varied from that of Alloy A, but each falls outside the claimed ranges in the present application. Alloys I-K fall within the broad range disclosed in the second sentence of the Polish Abstract, and fall within the claimed ranges in the present application.

Here Mr.

Henson stated that "Alloys B through H-2 all fall within the broad range disclosed in the second sentence of the Polish Abstract ... Alloys I-K fall within the broad range ... of the Polish Abstract, and fall within the claimed ranges in the present application." (see above copy and paste picture). But, examiner disagrees with Mr. Henson that alloy of Polish abstract contains Ag and Sb. Both are greater than zero. Moreover, alloys I-K are found inconsistent with instant rejected claims 1 and 5-7 which positively require Ag.

In the same declaration, Mr. Henson further stated that

I attempted to braze copper coupons and/or T-Joints using the brazing paste as taught by the Polish Abstract. I was unable to get the paste to properly melt and flow. Attached to my Affidavit are several pictures illustrating the inability to properly melt and flow the braze paste.

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In page 3 of said declaration Mr. Henson

3. The Polish Abstract stated that the brazing could be performed below 9/3 K, which corresponds to 1292°F, but I was not able to obtain a braze either below that temperature, or at temperatures well above that temperature. The first four pictures attached specifically show the attempt to braze a paste using Alloys A and B. I also attempted several other of the Alloys A-K, and obtained essentially identical results with each attempt, namely, the pastes either simply would not melt and flow, or when they did flow, it required excessive heat well above 1292°F.

4. Thus, I attempted to follow the teachings of the Polish Abstract, both in its broad teachings and its specific example, and I was unable to form a braze using a brazing paste as taught therein.

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concluded that "

" It is

noted in Mr. Henson's conclusion 3 that alloys A-K ... would not melt and flow at

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temperature below 1292 °F. Applicant concludes that teachings of the Polish Abstract are unable to form a braze. In response to applicant's conclusion in Office Action mailed October 25, 2005, page 8, examiner stated that

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Applicants' argument as set forth in page 12, first full paragraph is noted. But, Alloy F in the declaration has composition anticipated in instant claim 1. But Alloy F is also in the unsatisfied alloy list. Moreover, Alloy compositions of I, J, and K (See pages 7-8 of second affidavit) are total different from instant claim 1 which requires Ni and Ag. Compositions of alloys I, J, and K are filed after Final rejection mailed December 1, 2004.

Alloy	P	Sn	Si	Ni	Ag	Sb	Cu
F in declaration	6	8	0.5	0.1	15	3	balance
Instant claim 1	4-9	0.1-10	Up to 3.0	0.1-15	0.1-18	Up to 4	balance

If alloy F (which anticipated claimed composition) is inoperable as stated by Mr. Henson, it is unclear why the instant claimed alloy would be operable? Thus, tests presented by Mr. Henson in his declaration are questionable.

Applicant's argument in page 5, first paragraph is noted. But, it is known in the solder art that carrier and flux have different functions although sometimes carrier can be acted as flux.

Applicant argue that Polish abstract and Chinese abstract are not in the same art. But both are directed to joining by molten metals.

Applicant's argument with respect to the additional elements in the solder is noted. But, Chinese abstract is cited to show recited forms of solder are conventional.

Applicant argues that EP 465861 does not disclose Ni. But, claims rejected by said reference do not require Ni as essential element.

Applicant's argument with respect to CN 1060052 and Joseph is noted. But, applicant failed to provide factual evidence by declaration that the additional elements in said references would materially affect the basic and novel characteristics of a composition. Ex parte Davis, et al., 80 USPQ 448, 450 (PTO Bd. App. 1948), In re Janakirama-Rao, 317 F. 2d 951, 137 USPQ 893, 894 (CCPA 1963), In re Garner, 412 F 2d 276, 162 USPQ 221, 223 (CCPA 1969), and In re Herz, et al., 190 USPQ 461, 463 (CCPA 1976). When applicant contends that modifying components in the reference composition are excluded by the recitation of "consisting essentially of" applicant has the burden of showing the basic and novel characteristic of his/her composition - i.e. a showing that the introduction of these components would materially change the characteristics of applicant's composition. In re De Lajarte, 337 F 2d 870, 143 USPQ 256 (CCPA 1964) and Ex parte Davis, et al., 80 USPQ 448, 450 (PTO Bd. App. 1948).

Conclusion

Applicant is reminded that when amendment and/or revision is required, applicant should therefore provide a concise explanation and support with page and line number in the specification for any amendments made to the disclosure. See 37 C.F.R. Part §41.37 (c)(1)(v).

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
May 15, 2006